

**REMARKS**

Claims 1-3 and 6-33 are rejected, and claims 4 and 5 are objected to as being allowable if rewritten in independent form.

Claims 4 and 5 have been rewritten in independent form as new claims 31 and 32, respectively. Claims 1, 3, 4 and 5 have been canceled. Claims 2, 6, 9, 19, 20, 21 and 22 have been amended to depend from claim 31 or claim 32. Claim 8 has been amended to depend from claim 31.

Claim 27 has been amended to recite a step of producing a nitride semiconductor product comprising an n-type layer, a light-emitting layer and a lower p-type layer by the method for producing a nitride semiconductor product according to claim 23. Claims 28, 29 and 30 have been amended to depend from claim 27.

In response to the rejection under 35 U.S.C. § 112, second paragraph, claim 16 has been canceled.

Entry of the amendments is respectfully requested as placing the case in condition for allowance.

Review and reconsideration on the merits are requested.

Claims 1-3, 6-12, 15-17, 19-21 and 23-29 were rejected under 35 U.S.C. § 102(b) as being anticipated by JP-A-2002-043618 to Hidemi (hereinafter, Hidemi). The Examiner considered Hidemi as meeting each of the terms of the rejected claims, including a barrier sublayer E grown at a temperature lower than that of barrier sublayer C, where barrier sublayer C is disposed closer to the substrate than the barrier sublayer E.

Applicants respond as follows.

Claims 2, 6, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21 and 22 depend primarily or secondarily on claim 31 and/or claim 32. Claims 4 and 5 indicated as being allowable have been rewritten in independent form as claims 31 and 32, respectively. Therefore, claims 2, 6, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21 and 22 should be allowable for the same reason that claims 31 and 32 are allowable. This leaves claims 23-29 subject to rejection as being anticipated by Hidemi. Claim 27 depends from claim 23, and claims 28 and 29 depend from claim 27. Thus, Applicants address the rejection as to independent claim 23.

The method of claim 23 comprises growing a barrier layer over a quantum well structure at an elevated temperature which is higher than a growth temperature of the well layer by 50°C or more; subsequently, lowering the growth temperature again by 50°C or more; and *further growing the barrier layer at the lowered temperature.*

Hidemi discloses a barrier layer including component barrier layers A and B where well layer 5 is formed at 750°C, the temperature is ramped up from 750 to 1050°C in forming barrier layer A, and barrier layer B is then formed at 1050°C. See paragraph [0048] of Hidemi. The temperature of the substrate is then lowered to 750°C so as to grow a second well layer and repeat the same procedure.

Thus, Hidemi fails to disclose after growing a barrier layer at an elevated temperature, lowering the growth temperature by 50°C or more and “further growing the barrier layer at the lower temperature” as required by claim 23. Rather, barrier layer B is formed at a temperature of 1050°C which is not lower by 50°C or more than the growth temperature of the barrier layer A.

Because Hidemi does not meet each of the terms of claim 23, it is respectfully submitted that claim 23 is not anticipated by Hidemi and withdrawal of the foregoing rejection under 35 U.S.C. § 102(b) is respectfully requested.

Claims 13-14 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hidemi. Further, claims 22 and 30 were rejected as being unpatentable over Hidemi in view of U.S. Patent Application Publication No. 2002/0070681 to Shimizu et al. (hereinafter, Shimizu).

In response, amended claims 13, 14 and 18 depend secondarily from claim 31 or claim 32, such that the rejection is moot.

Likewise, claim 22 has been amended to depend from claim 31 or 32.

As to claim 30, Applicants rely on the response above with respect to the rejection over Hidemi alone. None of Hidemi and Shimizu discloses the limitation of claim 23 of “further growing the barrier layer at the lower temperature” from which claim 30 secondarily depends.

Withdrawal of the foregoing rejections is respectfully requested.

Withdrawal of all rejections and allowance of claims 2, 6, 8-15 and 17-32 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

AMENDMENT UNDER 37 C.F.R. § 1.116  
Application No.: 10/574,202

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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